NATIONAL CENTER FOR
COMPLEMENTARY AND ALTERNATIVE
MEDICINE

Research Progress Update

A Report for Fiscal Year 2000

INTRODUCTION

When the National Center for Complementary and Alternative Medicine (NCCAM) was established in Fiscal Year (FY) 1999, experts were recruited to build an infrastructure capable of supporting a new research enterprise and the Center's future growth. NCCAM also established a program of Specialized Research Centers to build essential research capacity in the complementary and alternative medicine (CAM) community. We launched a program of clinical trials, including the largest and most rigorous Phase III studies ever designed for a range of CAM modalities. We also initiated a portfolio of investigator-initiated research.

During the past year, and with the recruitment of our first Director, we have rapidly expanded our grants portfolio. It now addresses a wide range of conditions and CAM modalities. Based on the input from the communities we serve, our statutory authorities, and the funding NCCAM has received thus far, we developed a strategic plan to wisely guide our future growth and direction.

Our new strategic plan, *Expanding Horizons of Healthcare*, together with our *Strategic Plan to Address Racial and Ethnic Health Disparities* outline a clear, yet flexible research agenda through FY 2005. Consistent with these plans, we have identified priority areas that warrant immediate investments due to pressing public health needs and a dearth of valid scientific information or sufficient maturation of the science. NCCAM's areas of focus include:

1. **mechanisms of CAM interventions;**
2. **cancer;**
3. **botanicals;**
4. **health disparities; and**
5. **integrative medicine and research training.**

This report highlights some of our current program activities and plans in these areas.

mechanisms of CAM intervention

While people have used complementary and alternative remedies for centuries, little is known about how they work. By understanding the underlying mechanisms of CAM modalities, we could better monitor their actions and develop biomarkers that correlate with beneficial clinical outcomes. Thus, we would be better positioned to prove which CAM modalities work and which do not, and to inform the public accordingly.

Phase III Clinical Trials. One of NCCAM's highest priorities is to conduct Phase III clinical trials of CAM modalities. NCCAM's phase III clinical trials are built upon a substantial body of scientific evidence concerning a given modality. While sufficiently complex in design and ambitious in scope to address the critical scientific issues and patient safety concerns, they are well poised to definitively address the most obvious premise, "Does this modality work?" In collaboration with other NIH Institutes and Centers (ICs), NCCAM currently supports five multiyear, multicenter phase III clinical trials:

1. **Hypericum for depression**—the National Institute of Mental Health (NIMH);

2. **Shark cartilage for lung cancer**—the National Cancer Institute (NCI);

3. ***Gingko biloba* for dementia**—the National Institute on Aging (NIA), the National Heart, Lung and Blood Institute (NHLBI), and the National Institute of Neurological Disorders and Stroke (NINDS);

4. **Acupuncture for osteoarthritis pain**—the National Institute of Arthritis and Musculoskeletal and Skin Diseases (NIAMS); and

5. **Glucosamine/chondroitin sulfate for osteoarthritis**—NIAMS.

Specialty Research Centers. In addition to supporting multicenter clinical trials, NCCAM now funds 15 specialty research centers that form a research infrastructure on which to investigate the mechanisms underlying CAM treatments and their health effects. NCCAM-funded centers cover CAM approaches for many areas of major public health need, including drug addictions, aging and women's health, arthritis, craniofacial disorders, cardiovascular diseases, neurological disorders, pediatrics, and chiropractic research. These centers constitute a major investment of NCCAM's resources and serve as the focal point for initiating and maintaining state-of-the-art multidisciplinary CAM research, developing core research resources, training new CAM investigators, providing community outreach and education, and expanding the research base through collaborative research and outreach to scientists and clinicians.

Efficacy of Acupuncture. More than one million people in the U.S. receive acupuncture, resulting in approximately 10 million treatment visits annually.[1] Acupuncture is administered by a variety of health care providers ranging from conventional physicians to Traditional Chinese Medicine practitioners. In response to this great public interest, NCCAM has funded multiple studies to examine the effectiveness of acupuncture for a variety of conditions. Currently, there is considerable use of acupuncture for the management of both chronic and acute pain. NCCAM supports studies to evaluate acupuncture for dental pain, back and neck pain, and carpal tunnel syndrome. NCCAM also supports studies of "lesser known" applications of acupuncture, including the treatment of hypertension, cocaine abuse, and pre- and postnatal depression. Investigations of the many different applications of acupuncture should provide us with greater insight into the beneficial use of acupuncture.

[1]Lytle CD: *An Overview of Acupuncture.* Center for Devices and Radiological Health. Food and Drug Administration, Department of Health and Human Services. 1993.

Spinal Manipulation. New to NCCAM's research portfolio are studies to examine the efficacy and mechanisms of action of specific types of spinal manipulation, including those employed in chiropractic. Studies include examination of the efficacy of spinal manipulation on chronic neck pain and range of motion, as well as the impact of lumbar spinal manipulation on posture.

FUTURE DIRECTIONS

Chelation Therapy. Coronary artery disease (CAD) is the leading cause of mortality for both men and women in the United States, with more than 500,000 Americans dying of heart attacks each year.[2] Despite decades of use, studies of ethylenediaminetetraacetate (EDTA) chelation therapy on CAD have been extremely few, very small in size, and of flawed design, offering few conclusions concerning its true safety and effectiveness. To address this important public health issue, NCCAM plans, in collaboration with NHLBI, to solicit applications to conduct the first substantive, multisite, clinical trial, using rigorous trial design and validated outcomes measures, to investigate the efficacy and safety of EDTA chelation therapy in individuals suffering from CAD.

Biology of Acupuncture. Despite the growing body of literature that addresses the clinical effects of acupuncture, there are critical scientific gaps. In particular, NCCAM plans to invite seasoned investigators to join us in exploring how acupuncture works. Potential areas of research include the basic biology and biochemistry of acupuncture, its effects at the cellular level, its effects upon body systems (such as the immune and nervous systems), and genetic factors that correlate with responses to acupuncture therapy.

Investigations of the Placebo Effect. The placebo has received an increasing amount of attention recently due to its effect on pain management. In November 2000, NCCAM and the National

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[2]National Center for Health Statistics. National Vital Statistics Reports, 1998 Vol. 48, No. 11. 2000.

Institute of Diabetes and Digestive and Kidney Diseases (NIDDK) co-sponsored a major international conference to examine social, psychological, and neurobiological contributions to the placebo effect, and how to ethically employ and evaluate placebo actions in clinical trials. The ultimate outcome of the meeting is the development of a multidisciplinary research agenda in which NCCAM and other ICs may sponsor basic and clinical investigations of placebo mechanisms and use.

Osteoarthritis. The pain and limitation of motion caused by osteoarthritis (OA) are significant contributors to disability and dependence to millions of older Americans.[3] Because current medications for OA are not sufficiently effective for all individuals and may yield dose-limiting side effects, the public is seeking alternative methods of treatment. In conjunction with NIAMS and NIA, NCCAM plans to support innovative research projects that explore the entire repertoire of CAM strategies used by the public in the prevention or treatment of OA. Relevant CAM modalities worthy of further investigation include various forms of manual manipulation, magnet therapy, and s-adenosylmethionine (SAM-e).

[3]Kay HS, Kang T, and LaPlante MP: *Disability Statistics Report (14): Mobility Device Use in the United States.* U.S. Department of Education, National Institute on Disability and Rehabilitation Research. 2000.

One of every four Americans dies of cancer, making it the second leading cause of death. During the year 2000, an estimated 552,200 Americans died of cancer, averaging more than 1,500 deaths per day. Cancer costs this nation an estimated $107 billion annually, including health care expenditures and lost productivity from illness and death.[4]

Many cancer patients use CAM as a primary treatment or, more often, to alleviate the discomfort of conventional cancer therapy; however, the subject goes largely unexplored in dialogues between oncologists and their patients. A recent survey of cancer patients elucidated the extent to which CAM modalities are incorporated in cancer treatment. In total, nearly 85 percent of the patients surveyed used at least one CAM therapy while undergoing conventional oncology treatment.[5] Among the most popular modalities are spirituality, vitamins and herbs, and movement/physical therapies.[6] This survey illustrates not only the need for frank oncologist-patient discussions, but also the need to carefully examine combinations of cancer and CAM therapies. It is possible that some modalities are beneficial, while others are ineffective or otherwise diminish the effectiveness of conventional treatments.

NCCAM's rapidly growing cancer portfolio is directed at CAM therapies appropriate to the treatment of the disease itself, as well as

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[4]Centers for Disease Control and Prevention. *Cancer Registries: Foundation for Comprehensive Cancer Control 1999.* CDC, National Center for Chronic Disease Prevention and Health Promotion. 2000.

[5]Richardson MA, Sanders T, Palmer JL, Greisinger A, and Singletary SE: Complementary/alternative medicine use in a Comprehensive Cancer Center and the implications for oncology. *Journal of Clinical Oncology* Vol 18: 2505-14, 2000.

[6]Ibid.

its complications, encompassing both the study of cancer interventions and palliative care. In FY 2000, NCCAM spent more than $4 million in support of cancer research studies – a three-fold increase over FY 1999. Through FY 2001 and FY 2002 we will further expand our support for meritorious research.

Specialty Research Centers. In FY 2000 NCCAM funded two new Specialty Research Centers dedicated to studying the safety and effectiveness of several popular CAM cancer therapies. Awards totaling $8 million each over five years were made to Johns Hopkins University and the University of Pennsylvania. The Johns Hopkins Center is studying the anti-oxidant effects of herbs in cancer cells and the safety and efficacy of PC-SPES (a popular mixture of Chinese herbal medications) in men with prostate cancer. The University of Pennsylvania Center is examining the mechanisms of action, safety, and clinical efficacy of hyperbaric oxygen (oxygen at greater than atmospheric pressures) for the treatment of head and neck cancers.

Gonzalez Therapy. Certain CAM approaches are controversial, particularly those used instead of conventional regimens for treating cancer. Nonetheless, NCCAM is committed to pursuing rigorous investigations of such therapies for which there is sufficient preliminary data, compelling public health need, and ethical justifications to do so. This is illustrated by our support of a study of an approach advocated by Dr. Nicholas Gonzalez. Dr. Gonzalez treats cancer patients with dietary supplements, including pancreatic enzymes, magnesium citrate, papaya extracts, vitamins, minerals, trace elements, and animal glandular products, as well as with coffee enemas. Very preliminary data suggests the therapy may be effective in prolonging life expectancy for those suffering from pancreatic cancer. Given that conventional regimens for this type of cancer only moderately prolong life, there is sufficient argument from a public health standpoint to evaluate the regimen in a more rigorous fashion. Accordingly, to assess Dr. Gonzalez's protocol, NCCAM and NCI are funding and overseeing a substantive pilot trial of 90 patients with pancreatic cancer at the Columbia-Presbyterian Cancer Center.

Shark Cartilage. Our cancer research portfolio includes studies of shark cartilage that are also funded in collaboration with the NCI. These studies include an ongoing Phase III clinical trial involving over 700 lung cancer patients in the United States and Canada. A second trial will examine safety and efficacy of shark cartilage in patients with a variety of advanced cancers.

Quick Trials. In conjunction with NCI, NCCAM has embarked upon a creative, new research grant mechanism to simplify the grant application process and to provide rapid turnaround from application to funding. Initially announced for a pilot program in prostate cancer, the Quick Trial mechanism has been used for pilot, phase I, and phase II cancer clinical trials testing new agents, as well as patient monitoring and laboratory studies to ensure timely development of new treatments. We intend to support well-designed studies in such areas as complex CAM systems (i.e., Revici or Gerson therapy), high dose anti-oxidants, herbal mixtures, and whole plant extracts.

FUTURE DIRECTIONS

Supplements to NCI Cancer Centers. NCI's Cancer Centers possess the infrastructure, organization, leadership, and integrated multidisciplinary objectives enabling them to build and incorporate new programs in emerging areas of cancer research. Rather than attempting to duplicate the success of this program, NCCAM plans to solicit and fund competitive, supplemental awards to existing NCI-funded Cancer Centers. This will permit us to develop innovative pilot projects in areas of cancer CAM research. Emphasis will be placed, where possible, on studies involving minority and underserved populations. Preliminary data from this research will serve as the basis for more definitive clinical trials.

CAM at the End-of-Life. Cancer patients for whom a cure is not an option face not only death, but also the diminution of quality of life and intractable pain. Perhaps as many as 70 percent of these cancer patients are seeking complementary and alternative therapies

to expand their end-of-life care options.[7] NCCAM plans to solicit Phase I and II clinical trials of CAM modalities for the prevention and management of symptoms associated with the end-of-life, including secondary side effects of chemotherapy and radiotherapy, and the enhancement of the well-being of persons facing a life-limiting illness. In parallel, we are interested in supporting similar studies for people with HIV/AIDS.

[7]Eidinger RN and Schapira DV. Cancer patients' insight into their treatment, prognosis, and unconventional therapies. *Cancer*. 53:2736-2740. 1984

botanicals

Botanicals are among the most popular CAM therapies[8] and Americans rely upon them for treatment and prevention of a number of conditions. These include St. John's wort for depression, *Ginkgo biloba* for improved memory, and saw palmetto for prostate enlargement. Still, we have much to learn about these products, most notably their relative safety and efficacy, side effects, and interactions with medications. For instance, recent studies suggest that St. John's wort is more effective than placebo in treating depression.[9] While awaiting results of the NCCAM-funded multicenter trial of St. John's wort for depression, we are investigating other properties of St. John's wort. For example, when used with some life-saving drugs, like the AIDS drug indinavir, St. John's wort increases the rate at which the drug is eliminated from the bloodstream, rendering the drug ineffective sooner.[10] This phenomenon has also been observed with certain oral contraceptives[11] and drugs that prevent rejection of transplanted organs.[12] These findings illustrate vividly both the promise and challenges presented by botanicals and other CAM therapies. Through rigorous research, NCCAM helps identify the extent to which individual therapies are safe and effective, as well as

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[8]Eisenberg DM, et al. Trends in Alternative Medicine Use in the United States, 1990-1997. *JAMA*. 280:1569-1575. 1998

[9]Philipp M, et al. *Hypericum* Extract Versus Imipramime or Placebo in Patients with Moderate Depression: randomised multicentre study of treatment for eight weeks. *British Medical Journal* 319:1534-1539. 1999

[10]Piscitelli SC, et al. Indinavir concentration and St. John's wort. *Lancet*. 355:547-548. 2000

[11]Baede-van Dijk PA, et al. Drug interactions of *Hypericum perforatum* (St. John's wort) are potentially hazardous. *Ned Tijdschr Geneeskd*. 144(17):811-2. 2000

[12]Ruschitzka F, et al. Acute heart transplant rejection due to Saint John's wort. *Lancet*. 355(9203):548-9. 2000

under what circumstances an effective CAM modality may interfere with other treatments.

Centers for Dietary Supplement Research. In collaboration with the NIH Office of Dietary Supplements (ODS), NCCAM now funds four Centers for Dietary Supplement Research with an emphasis on botanicals; each totaling approximately $1.5 million per year for five years. The Centers serve to identify and characterize botanicals, assess bioavailability and activity, explore mechanisms of action, conduct preclinical and clinical evaluations, establish training and career development, and help select the products to be tested in randomized controlled clinical trials. The two new Centers NCCAM added in FY 2000 include the Purdue University Center, which focuses on the health effects of antioxidants in botanicals, and the University of Arizona, which studies the use of botanicals for disease prevention and treatment.

FUTURE DIRECTIONS

Botanical-Drug Interactions. As illustrated by the effects of St. John's wort on the AIDS drug indinavir, botanical products interact with a number of important drugs. This is of concern because 18 percent of individuals taking prescription drugs also use botanicals, high dose vitamin products, or both.[13] However, little reliable research-based data is available to guide consumers and practitioners about the use of botanicals simultaneously with over-the-counter and prescription drugs. NCCAM is now soliciting applications to investigate botanical-drug interactions in vitro, in animal models, and in phase I and II clinical studies, as well as to increase our knowledge of the mechanisms of action of botanicals. One special emphasis will be an examination of interactions between CAM botanicals and HIV/AIDS therapies.

[13]Eisenberg DM, et al. Trends in Alternative Medicine Use in the United States, 1990-1997. *JAMA*. 280:1569-1575. 1998

Soy Supplements for Women with Breast Cancer. Some menopausal and postmenopausal women find symptom relief through conventional estrogen replacement therapy (ERT). Moreover, ERT has been associated with benefits such as preservation of cardiovascular, skeletal, genitourinary, and cognitive health.[14] Unfortunately, this therapy is associated with an increased risk of breast cancer, dissuading some women from using it and excluding its application for breast cancer survivors. Not surprisingly, despite its benefits, less than 20 percent of women in the United States use ERT.[15] Many women explore alternative approaches to estrogen replacement to eliminate the risks of conventional ERT, with the hope of reaping the benefits. Soybeans are known to be rich in naturally occurring compounds with estrogen-like activity. Several studies of these popular soy-derived phytoestrogens (PEs) yielded unclear and contradictory results, leaving open the question of whether soy may protect against breast cancer or, like conventional ERT, cause its emergence.[16] [17] NCCAM intends to study these issues and assess the impact in a Phase II clinical trial of PE supplementation on the health of women after a breast cancer diagnosis.

Natural Products Development. NCCAM recognizes the great need to study botanicals and has encountered some limitations in doing so. Perhaps the most significant limitation is the lack of standardized products worthy of in-depth study. Consequently, NCCAM plans to solicit applications for the development of standardized botanical products. The availability of sufficient

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[14]Vassilopoulou-Sellin R, Asmar L, Hortobagyi GN, et al. Estrogen replacement therapy after localized breast cancer: clinical outcome of 319 women followed prospectively. *J Clin Oncol.* 17(5):1482-1487. 1999

[15]Brett K and Madams J. Use of postmenopausal hormone replacement therapy: estimates from a nationally representative cohort study. *Am J Epidemiol.* 145:536-545. 1997

[16]Quella SK, et al. Evaluation of soy phytoestrogens for the treatment of hot flashes in breast cancer survivors: A North Central Cancer Treatment Group Trial. *J Clin Oncol.* 18:1068-1074. 2000

[17]Cline JM, Davis VL, Huges CL; Dietary soy has dose-dependent agonist/antagonist effects on the mammary glands and uteri of estrogen-treated rats. Dunaif GE, Olin SS, Scimeca J, Thomas JA, Eds. *Human Diet and Endocrine Modulation.* ILSI Press. 1998

quantities of a given botanical will ensure a reliable supply for clinical and basic research, allowing investigators to make comparisons across studies, between known products, and permit large randomized controlled clinical trials.

Cranberry for Urinary Tract Infections. Cranberries have been used widely for decades for the prevention and treatment of recurring urinary tract infections (UTI), particularly in women.[18] However, no conclusive studies have been conducted in humans. Consequently, NCCAM intends to assess the effectiveness and potential mechanisms of action of cranberry juice and other cranberry products in preventing UTIs in susceptible populations, and to determine the appropriate dosage and duration of therapy.

[18]Jepson RG, et al. Cranberries for Preventing Urinary Tract Infections. *The Cochrane Library*, Issue 3, 2000.

The NCCAM recently recruited a director for the Office of Special Populations. This office will focus on identifying the extent and nature of CAM use among special populations; studying the application of CAM therapies to the reduction of disparities; increasing participation of underrepresented populations in NCCAM-supported clinical trials; and enhancing the ability of minority institutions to conduct CAM research. In conjunction with the trans-NIH effort to address the health disparities of U.S. racial and ethnic minorities, we have developed our own multi-faceted research plan. This plan will serve as a guide for the development of new research initiatives to address minority health and health disparities through FY 2005.

Magnesium Therapy for Asthma. In the last several years there has been a significant increase in the number of Americans suffering from asthma. Although the prevalence of asthma does not vary substantially by racial/ethnic group, minority groups experience more severe disability and more frequent hospitalization from asthma than Caucasians.[19] [20] Basic and preliminary clinical studies summarized at a recent joint NCCAM/NHLBI workshop suggest that the mineral magnesium sulfate may be an effective new treatment for people with asthma. In collaboration with NHLBI, NCCAM plans to support a definitive study to assess the safety and efficacy of intravenous magnesium supplementation as a treatment for acute asthma. This

[19]CDC; Vital and Health Statistics, National Hospital Discharge Survey: Annual Summary, 1995; DHHS Publication No. PHS 98-1794 (Series 13, no. 133), 1998.

[20]Taylor WR, Newacheck PW. Impact of Childhood Asthma on Health; Pediatrics. 90(5):657-662. 1992.

study would determine the safety and efficacy of magnesium in different subpopulation groups, including different age and racial/ethnic groups.

Epidemiology of CAM use in Minority Populations. Although the demographics, prevalence, and patterns of use of CAM in the United States have been described for the general population, its use by racial and ethnic minorities is currently not known. NCCAM, in conjunction with the Centers for Disease Control and Prevention (CDC), has begun epidemiological investigations of the use of CAM within minority and underserved populations, emphasizing the use of traditional and folk medicine among immigrant populations and the rural poor. Information gained from these surveys will help to prioritize NCCAM research agendas for individual populations.

Institutional Research Training Awards for Minority Researchers. To improve NCCAM's ability to obtain accurate and effective information that is relevant to the diverse cultures that comprise the United States, we seek to achieve greater diversity among our research communities. We will use the National Research Training Award (T32) mechanism to support pre- and post-doctoral trainees at minority and minority-serving institutions having the potential to develop meritorious training programs in CAM research. Through this effort, we hope to ensure that highly trained minority scientists will be available in adequate numbers and in appropriate research areas and fields so as to meet the nation's CAM research needs.

FUTURE DIRECTIONS

As part of fulfilling our overall scientific mission, NCCAM will continue to address health disparities. We will continue to focus on diseases that contribute to health disparities and increase our outreach to minority populations. We will also continue to create opportunities for minority scientists and students to pursue research training.

During 2001, the draft version of the *Strategic Plan to Address Racial and Ethnic Health Disparities* will be posted on the NCCAM Web site for public comment.

Integrative Medicine. Medicine is an ever-evolving discipline. It integrates or rejects approaches based on scientific evidence. The results of rigorous research in CAM will enhance the successful integration of safe and effective modalities into mainstream medical practice. A number of practices, once considered unorthodox, have been proven safe and effective and have been assimilated seamlessly into current medical practice. Practices such as support groups are now widely accepted as important allies in our fight against disease and disability. NCCAM has initiated a series of specific activities to facilitate the successful integration of safe and effective modalities into mainstream medical practice. The activities include conducting research that provides compelling evidence of efficacy and safety and publishing these findings in peer-reviewed journals; studying factors that promote or impede integration; supporting the development of model curricula for medical and allied health schools and continuing medical education programs; and informing the public in a clear and definitive manner. In FY 2001, we launched our intramural research program in which CAM strategies will be explored in patients at the NIH Clinical Center, the world's largest facility dedicated to patient-oriented research. In addition, we mounted a new integration research initiative to study factors that promote or impede integration; determine whether CAM research results can be translated to real-world settings; and support the evaluation of programs that integrate CAM and conventional care. The NCCAM's

Intramural Research Program and Specialized Research Centers consider integrative medicine an essential component of their activities.

Research Training. NCCAM's ability to achieve our research goals is dependent on the availability of a critical mass of skilled investigators in both CAM and conventional communities. It is our goal to increase the knowledge, experience, and capacity of CAM practitioners to conduct or participate in rigorous research as well as enhance conventional practitioners' and researchers' knowledge and experience in specific CAM areas. NCCAM has taken a comprehensive approach to research training, making awards at the institutional level, as well as to individuals. Likewise, NCCAM supports mentored and independent trainees, from the pre-doctoral level through mid-career and senior faculty members. The research spectrum of these trainees is broad, covering the continuum of basic through clinical studies. NCCAM supports all of the major training mechanisms offered by NIH. Research training is also an important component of NCCAM's Intramural Research Program and our specialized Research Centers. Some of NCCAM's Centers spend as much as ten percent of their budget on training.

CAM Research Database. In FY 2001, NCCAM partnered with the National Library of Medicine (NLM) to develop CAM on PubMed. This new resource, a subset of the NLM's PubMed, offers consumers, researchers, health care providers and CAM practitioners free, web-based access to journal citations directly related to complementary and alternative medicine.

PubMed provides an easy way to access over 11 million citations and abstracts in the MEDLINE database and additional life science journals. MEDLINE currently covers nearly 4,500 journals published in the United States and more than 70 other countries.

FUTURE DIRECTIONS

NCCAM will work to facilitate a more integrated practice of medicine by continuing to hold CAM therapies to the highest standards of evidence. We have established two primary goals related to integration:

1. Facilitate development of model health professional curricula that incorporate information about safe and effective CAM practices; and
2. Facilitate coupling of effective CAM and conventional practices within a coordinated, interdisciplinary healthcare system.

CONCLUSION

NCCAM, in collaboration with the NIH Institutes and Centers and other outstanding government, academic and private sector partners, is building on a foundation of superb science and consumer service. NCCAM is set to emerge as a world leader—not only by researching the safety and effectiveness of complementary and alternative medicine —but by producing research results that will help treat or prevent many of the diseases that affect every American family.